SRF-SX906

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

SPECIFICATIONS

Time display
24 hour system
Frequency range

Frequency	Channel step
FM: 87.5 – 108.0 MHz AM: 530 – 1610 kHz	0.05 MHz 10 kHz
FM: 87.5 – 108.0 MHz AM: 531 – 1602 kHz	0.05 MHz* 9 kHz

* The frequency display is raised or lowered by steps of 0.1 MHz.
(Example : Frequency 88.05 MHz is displayed as "88.0 MHz.")

Intermediate frequency
FM 10.7 MHz
AM 195 kHz
Speaker
Approx. 3.6 cm ($1^{7}/_{16}$ inches), 7.2 ohms
Output
Ω jack (ø 2.5 mm, load impedance 16 Ω)
Power output
70 mW (at 10 % harmonic distortion)
Power requirements
3V DC, two R03 (size AAA) batteries
Auto power off function
Approx. 90 minutes
Dimension
Approx. 60 × 100.5 × 16.5 mm (w/h/d) incl. projecting parts and controls ($2^{3}/_{8}$ x $4^{1}/_{4}$ x $^{21}/_{32}$ inches)
Mass
Approx. 96 g (3.4 oz) incl. batteries
Supplied accessories
Carrying case (1), Stereo headphones (1)

Design and specifications are subject to change without notice.

FEATURES

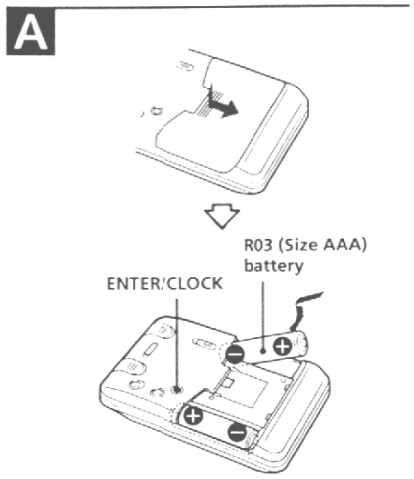
- Up to 7 FM/AM stations can be preset.
- Highly sensitive receiver for tuning in stations in a weak signal area.
- The alarm can be heard at the desired time. (Timer function/alarm function)
- Power goes off automatically after about 90 minutes. (Auto power off function)

MICROFILM

FM STEREO/AMP PLL SYNTHESIZED RADIO

SONY®

This section is extracted from instruction manual.

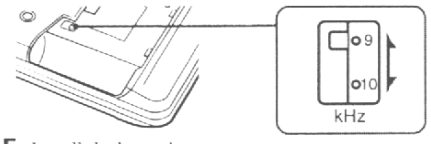


Changing the AM channel step

The AM channel step differs depending on areas. The channel step of the unit is factory-set to 10 kHz or to 9 kHz to match the frequency allocation system of the country as listed. You can change the channel step.

Area	Channel step
North and South American countries	10 kHz
Other countries	9 kHz

1 Turn off the radio.
2 Remove the batteries from the battery compartment.
3 Wait for more than three minutes.
4 Set 9/10 kHz to 10 kHz or 9 kHz using the tip of a ballpoint pen.



5 Install the batteries.

Note

If you change the channel step, reset the following:
- Preset stations
- Clock
- Timer
- Alarm

Installing Batteries (See Fig. A)

1 Open the lid of the battery case.
2 Insert the batteries with correct polarity. When you first insert the batteries, "0:00" flashes in the display window. To stop the display from flashing, press ENTER/CLOCK. For setting the clock, see "Setting the Clock."
3 Close the lid.

Using Sony batteries R03 (Size AAA) UM-4 (NU)

BAND	Battery life	
	Using headphones	Using speaker
FM	Approx. 19 hours	Approx. 11 hours
AM	Approx. 22 hours	Approx. 12 hours

When to replace batteries

When "" flashes or lights up in the display window, replace both batteries with new ones.
- Replace the batteries within 20 seconds. Otherwise, the memories for the clock and the preset stations will be erased. In this case, set the time and stations again.
- After replacing the batteries, press POWER/AUTO OFF so that "" disappears.

Note

When the unit is not to be used for a long period of time, remove the batteries to avoid damage caused by battery leakage and corrosion.

Operating the Radio (See Fig. B)

1 Connect the stereo headphones.
2 Press POWER/AUTO OFF to turn on the radio.
3 Select or with /ST/MONO/ selector.
  : When using the stereo headphones
  : When using the speaker
  To listen to an FM station through the speaker, the headphone cord serves as the FM antenna. Extend the headphone cord to improve the FM sensitivity.
4 Select FM or AM with BAND.
  The display of band changes every time you press the button.
5 Press TUNE/TIME SET to tune in a desired station.
  When you press the + of the button, the frequency in the display window goes up. When you press the – of the button, the frequency goes down. If you press and hold the button, the frequency changes faster.
6 Adjust the VOL (volume).

To turn off the radio

Press POWER/AUTO OFF again.

When the power is turned off automatically

The radio is turned off automatically after about 90 minutes to prevent unnecessary wear of the batteries. To listen to the radio continuously, press POWER/AUTO OFF.

To listen to FM stereo programs in stereo mode

Set ∩/ST/MONO/◁ to ST. If the poor station signal causes noise, set it to MONO.

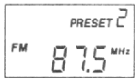
To prevent an accidental operation

Set HOLD (POWER) to the direction of the arrow to prevent the power from accidentally turning on or off.

Presetting the Stations (See Fig. B)

You can preset a total of 7 stations on FM and AM. To tune in a desired station, press the respective preset button.

1 Tune in a desired station.
2 Press a desired PRESET number (1 to 7) while keeping ENTER/CLOCK pressed.
When the desired station is preset, the beep sounds.
Example:
When the FM station of 87.5 MHz is preset on PRESET 2.



To change the preset station

Do the procedures from step 1.
The memory of the station previously preset to that number is erased.

Improving Receiving Condition

FM: Since the headphone cord serves as the FM, extend the headphone cord so that the FM sensitivity will be increased.
AM: The ferrite bar antenna is built into the unit. Rotate the unit horizontally for optimum reception.

Setting the Clock

1 Turn off the radio.
2 Press TUNE/TIME SET to set the time while keeping ENTER/CLOCK pressed.
When you press the + of the button, the time in the display window goes up. When you press the - of the button, the time goes down. If you press and hold the button, the time goes faster.
3 Release ENTER/CLOCK.
" : " indication in the display window flashes.

Turning on the Buzzer Sound

The buzzer sound can be set to come on at the desired time.
The timer and alarm functions are available. The timer function can set the desired time from 1 to 180 minutes later at the interval of one minute. The alarm function can set the specific time.

Setting the Timer

1 Turn off the radio.
2 Press TUNE/TIME SET to set the time for the buzzer sound while keeping TIMER pressed.
Example:
When the time for the buzzer sound is set to come in 30 minutes.
While pressing TIMER, ⏲ in the display window flashes.

3 Stop pressing TIMER.
The flash stops and the buzzer sound comes on at the preset time. When you listen to the radio, the radio sound comes out. When the buzzer sound stops, the radio sound comes on again.

To stop the buzzer sound

Press any button on the unit to stop the buzzer sound. Otherwise, it will keep coming on for about three minutes.

To release the timer

Press TIMER again to erase ⏲ in the display window.

Setting the Alarm

1 Turn off the radio.
2 Press TUNE/TIME SET to set the time for the buzzer sound while keeping ALARM pressed.
Example:
When the time for the buzzer sound is set at 8:25.
While pressing ALARM, (•) in the display window flashes.

3 Stop pressing ALARM.
The flash stops and the buzzer sound comes on at the preset time. When you listen to the radio, the radio sound comes out. When the buzzer sound stops, the radio sound comes on again.

To stop the buzzer sound

Press any button on the unit to stop the buzzer sound. Otherwise, it will keep coming on for about three minutes.

To release the alarm

Press ALARM again to erase (•) in the display window.

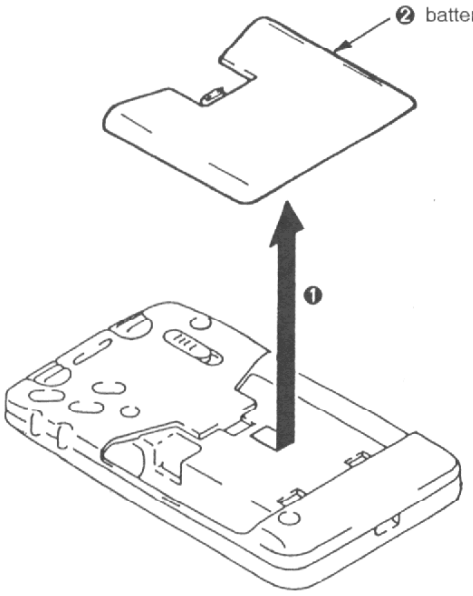
Note

If the display "0:00" in the display window flashes, the time for the alarm cannot be set.

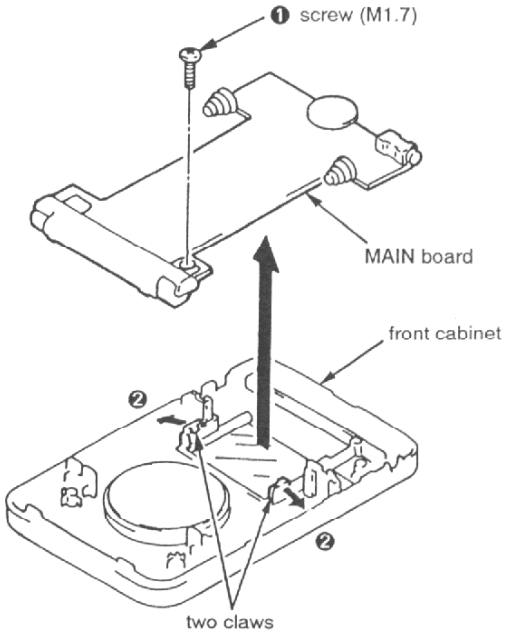
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

BATTERY CASE LID

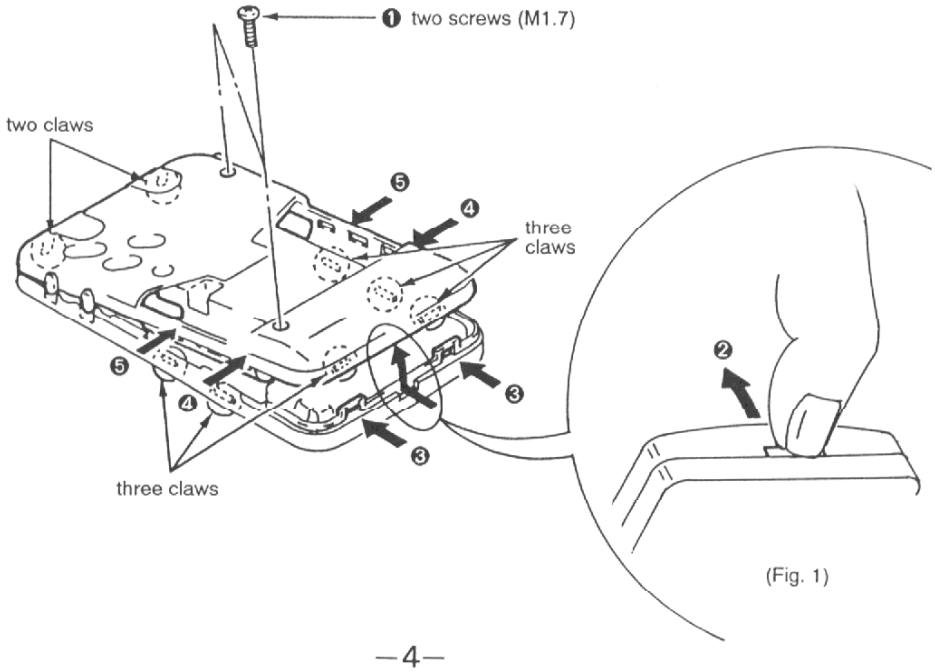


MAIN BOARD



REAR CABINET

1) Remove the screws ❶.
2) As shown in Fig. 1, pulling the cabinet (rear) in the arrow direction ❷ with your fingers, push the cabinet in the order of arrows ❸ to ❺ to disengage clicks (8 places).



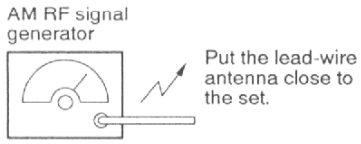
(Fig. 1)

SECTION 3
ELECTRICAL ADJUSTMENTS

AM Section

Setting:

BAND switch: AM

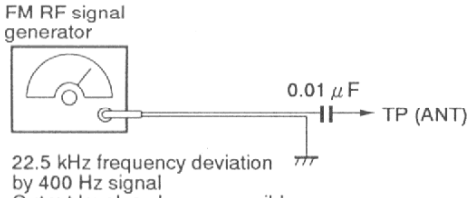


30% amplitude modulation
by 400 Hz signal
Output level: as low as possible

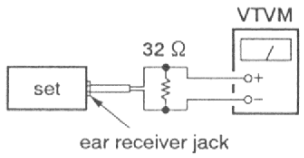
FM Section

Setting:

BAND switch: FM



22.5 kHz frequency deviation
by 400 Hz signal
Output level: as low as possible



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

AM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T2, T3	531 kHz

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L9	585 kHz
CT2	1,485 kHz

FM TRACKING ADJUSTMENT	
Adjustment for maximum reading on VTVM.	
L6	87.5 MHz
CT3	108 MHz

FM STEREO (76 kHz) ADJUSTMENT	
MODE	STEREO
Frequency Indication	Voluntary Frequency
Adjustment Element	RV2
Specified Value	76 kHz ± 200 Hz

FM VCO Voltage Check

Procedure:

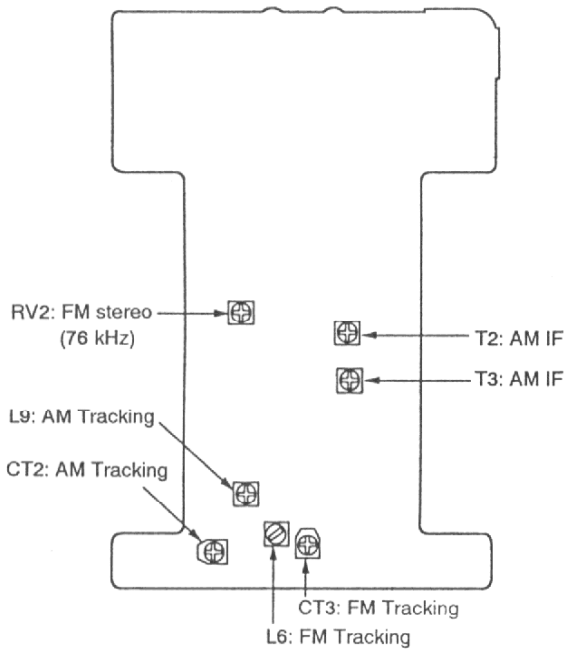
1. Connect the digital voltmeter to TP (LPF).
2. Tune the set to minimum frequency.
3. Confirm that the digital voltmeter reading is 2.7 V.

AM VCO Voltage Check

1. Connect the digital voltmeter to TP (LPF).
2. Tune the set to minimum frequency.
3. Confirm that the digital voltmeter reading is 2.5 V.

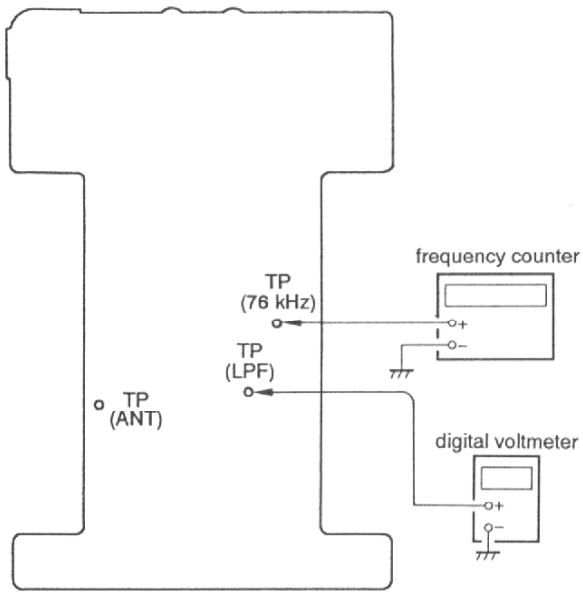
Adjustment Location:

– MAIN BOARD – (SIDE B)



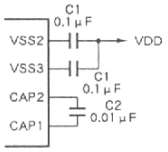
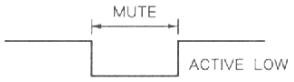
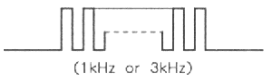
Test point Location:

– MAIN BOARD – (SIDE A)



SECTION 4
DIAGRAMS

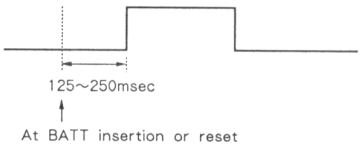
4-1. IC PIN FUNCTION DESCRIPTION
MAIN BOARD IC3 μPD1724GB-700-1A7 (SYSTEM CONTROL/LCD DRIVE)

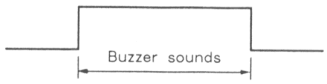
Pin No.	Pin Name	I/O	Function
1 | 10 51 | 56	LCD10 | LCD1 LCD16 | LCD11	O	Segment signal output pins to LCD panel. A combination with COM1 – COM3 to make up a matrix enables display of max. 48 dots. The segment signals are output to these pins by executing the LCD command. LCD drive voltage is 3.1 V type, 1/2 bias, 1/3 duty (frame frequency: 100 Hz). Also, LCD9 – LCD16 can be used as key source signals of key matrix, besides LCD segment output pins. These are output in the time division mode, and the key source signals are output at 6.7 ms cycle. Whether key source signals are output, besides display can be selected by the program. These pins are automatically set to the Low level (display OFF mode) at the Power ON Reset (VDD = Low → High) or Clock Stop. The display mode does not change at the Reset (CE = Low → High).
11 21 49 50	NC	—	
12 | 14	COM3 | COM1	O	Common signal output pins to LCD panel. A combination with LCD1 – LCD16 to make up a matrix enables display of max. 48 dots. Three different values of VSS3, VSS2, VDD are output at 50Hz cycle. These pins are automatically set to the Low level (display OFF mode) at the Power ON Reset (VDD = Low → High) or Clock Stop.
15 16 17 18	VSS3 CAP2 CAP1 VSS2		Pins to connect capacitors for a doubler circuit to generate the LCD drive voltage. To use the 3.1 V type, connect as follows:  However, note that the LCD drive voltage (VDD – VSS3) varies with the C1 and C2 values because of the doubler circuit configuration.
19	VDP	O	For muting  Audio is muted at the Low when the key is pressed or the buzzer sounds. VDP (Variable Duty Port) or 1bit output port (PG2). This can be selected by the program. When used as VDP, the 1.12 kHz pulse is continuously output, and the duty of this pulse is variable in 64 steps. $\left(\text{Duty} = \frac{26.7\ \mu s}{893\ \mu s} \sim \frac{867\ \mu s}{893\ \mu s} = \frac{2}{67} \sim \frac{5}{67}\right)$ It can also be used as a D/A converter by adding an integration circuit.
20	CGP	O	BEEP  Outputs the buzzer sounds when the key is pressed, timer has expired, or in case of an alarm. CGP (Clock Generator Port) or 1bit output port (PD3). This can be selected by the program. When used as CGP, the 1 kHz (duty 46.6%) or 3 kHz (duty 60%) pulse can be output continuously (Note 1).

Note 1: The output exclusive ports B, C, VDP, and CGP will output unstable data at the Power ON (VDD = Low → High), thus requiring these ports to be initialized by the program. Also, the data output at CE pin Low → High, or execution of CKSTP command is same as that output previously, requiring initialization as necessary.

Pin No.	Pin Name	I/O	Function
22	V_{DD}	—	Power supply pin of the device. It supplies 1.8 − 3.6 V voltage when PLL operates, or 1.5 − 3.6 V when only the CPU operates. The voltage can be lowered to 1.5 V when internal data memory (RAM) is retained (at execution of CKSTP command). Upon supply of voltage 0 → 1.5 V to this pin, the power ON reset circuit in the device operates, and the program starts from the address 0.
23	NC	—	
24	VCOM	I	Inputs local oscillation output (VCO output) of 10 − 130 MHz (0.2 Vpp min.). This pin is connected internally to the programmable counter through 1/32 and 1/33 two-modulus prescaler. This pin is selected when HF command is executed in the pulse swallow system. The HF pin is in the pull down status when VHF command is executed in the direct frequency division system and pulse swallow system, namely when AM and VHF pins are selected. Further, the signal must be input through a capacitor because AC amplifier is built in.
25	VCOL	I	Inputs local oscillation output (VCO output) of 0.5 − 15 MHz (0.2 Vpp min.). This pin is selected regardless of VHF or HF command, provided it is in the direct frequency division system. The AM pin is in the pull down status when pulse swallow system is selected. Further, the signal must be input through a capacitor because AC amplifier is built in.
26	V_{SS1}	—	
27 28	EO_1 EO_2	O	PLL error output pins. If divided local oscillation frequency (VCO output) is higher than reference frequency, these pins output high level signal, or if lower, they output low level signal. If equal, they are in the floating status. This output is input to LPF (Low Pass Filter), and is applied to the varactor diode via LPF. The EO_1 and EO_2 pins output same waveform, and which pin is to be used can be freely selected. These pins are in the floating status at the disabled PLL (set by PLL command, or when CE pin is on Low level).
29	CE	I	Device selection signal input pin. Set this pin to High level to make the device execute normal operation, or to Low level not to use the device. During this pin on Low level, PLL is disabled unconditionally. However, the Low level below 140 μs is not acceptable. Also, if a program uses CKSTP command, and the CKSTP command is executed at CE pin on Low level (CKSTP command is only active at CE = Low, and it functions same as NOP command at CE = High), the internal clock generator and CPU are disabled, and the memory (RAM) can be retained at low consuming current (3 μA max.). At this time, the display output (LCD_1 − LCD_{16} and COM_1 − COM_3) are turned off (Low level). Upon raising the CE pin from Low to High level, the device is reset, and the program starts from the address 0. Also, at this time, the port A is changed to input mode.
30	XO	O	Pins to connect a crystal oscillator. A crystal oscillates at 75 kHz.
31	XI	I	
32	V_{SS4}	—	A pin to connect a capacitor for regulator circuit to generate stable drive voltage for oscillator. Normally, connect a 0.1 μF capacitor to this pin. However, note that the regulator may not operate normally unless the C_{67} is less than 0.1 μF because of regulator circuit configuration.

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Function</th></tr>
<tr><td>33
|
36</td><td>PA3
|
PA0</td><td>I/O</td><td>PA2 For Power on
High at Radio ON.

PA1 Outputs Initialize signal.
 

High level is output when BATT is inserted first time in the Reset status.
PA0 Inputs Initialize signal.
Reads the Initialize signal output from PA1, and
Inputs it at High : 2-band type (SRF-M901)
Inputs it at Low : 3-band type (SRF-M902V)
4-bit I/O (Input/Output) port. For this port, I/O can be designated for each bit, and this designation is executed with the contents at address 1FH of bank 0 in the data memory (RAM) called PAIO word.
It becomes input port unconditionally at Power ON, clock stop, or CE pin start up from Low → High. (Note 2)</td></tr>
<tr><td>37
|
40</td><td>PB3
|
PB0</td><td>O</td><td>PB3
PB2
PB0 } Output the band information
<table><tr><th>BAND</th><th>PB2</th><th>PB3</th><th>PB0</th></tr><tr><td>AM</td><td>H</td><td>L</td><td>L</td></tr><tr><td>FM</td><td>L</td><td>L</td><td>L</td></tr><tr><td>TV(1-3)</td><td>L</td><td>L</td><td>H</td></tr><tr><td>TV(4-12)</td><td>L</td><td>H</td><td>H</td></tr><tr><td>OFF</td><td>L</td><td>L</td><td>L</td></tr></table>PB1 Outputs High level signal when the buzzer sounds by an alarm or timer.
 

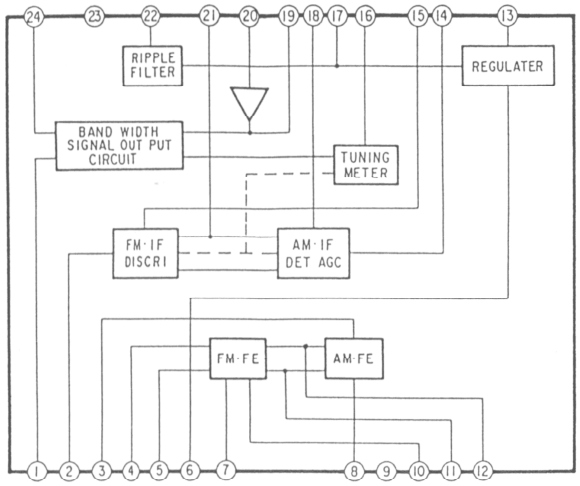
4-bit output exclusive port.
For PB0 and PB1, the sync. current is particularly reduced so that they can be used as a key return signal source of key matrix. If PB0 and PB1 pins are used as a key return signal source, the reverse-current preventive diode can be omitted.
If they are used as a normal output port, however, low level signals may not be output correctly because of small sync. current depending on the circuit to be driven. In this case, connect a pull-down resistor.
(Note 2, 3)</td></tr>
<tr><td>41
|
44</td><td>PC3
|
PC0</td><td>O</td><td>4-bit output exclusive port.
As the sync. current is particularly reduced so that this port can be used as a key return signal source of key matrix. If it is used as a key return signal source, the reverse-current preventive diode can be omitted.
If it is used as a normal output port, however, low level signals may not be output correctly because of small sync. current depending on the circuit to be driven. In this case, connect a pull-down resistor.
(Note 2, 3)</td></tr>
<tr><td>45
|
48</td><td>K3
|
K0</td><td>I</td><td>4-bit input exclusive port. Normally, it is used for key matrix input. The pin status is read in the data memory (RAM) designated in the operand field of KIN command or KI command, if executed.
As the key return signal source, Port C, PB0, PB1, and LCD9 – LCD16 can be especially used. If LCD9 – LCD16 are used for the key source signal, they output the key source signal at the interval of 6.7 ms while providing a display. Whether the key source signal was output or not can be judged with the TKLT or TKLF command. Therefore, the KI or KIN command must be executed after confirming the output of key source signal (by executing TKLT or TKLF command).</td></tr>
</table>

Note 2: In the port operating commands such as IN, OUT, SPB, and RPB commands, the PA0 and PA3 correspond to the least significant bit and the most significant bit of register or operand data respectively. This is also true for the Ports B and C.

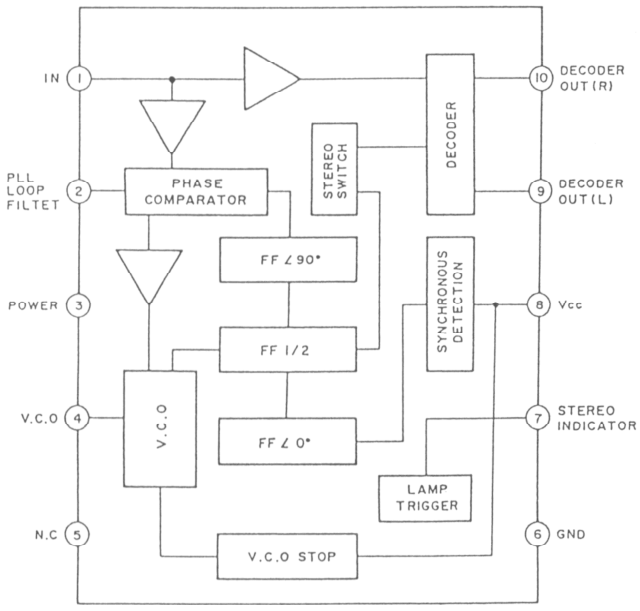
3: The output exclusive ports B, C, VDP, and CGP will output unstable data at the Power ON (V_{DD} = Low → High), thus requiring these ports to be initialized by the program. Also, the data output at CE pin Low → High, or execution of CKSTP command is same as that output previously, requiring initialization as necessary.

• IC Block Diagrams

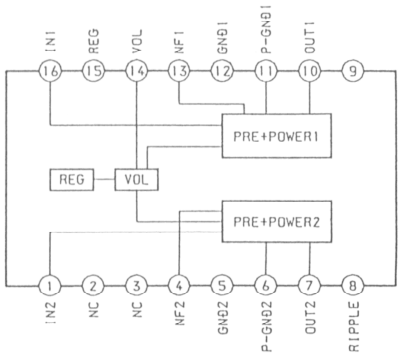
IC2 CXA1111N



IC3 LA3335M



IC4 CXA1522N



• Semiconductor Location

Ref. No.	Location
D4	G-4
D5	G-3
D6	G-4
D7	E-9
D8	B-3
D10	B-2
D11	C-3
D12	C-3
IC2	F-9
IC3	E-4
IC4	D-9
IC5	C-4
IC6	C-5
IC7	B-4
Q4	G-4
Q6	E-9
Q7	C-9
Q8	B-8
Q9	C-2
Q10	C-10

Note:

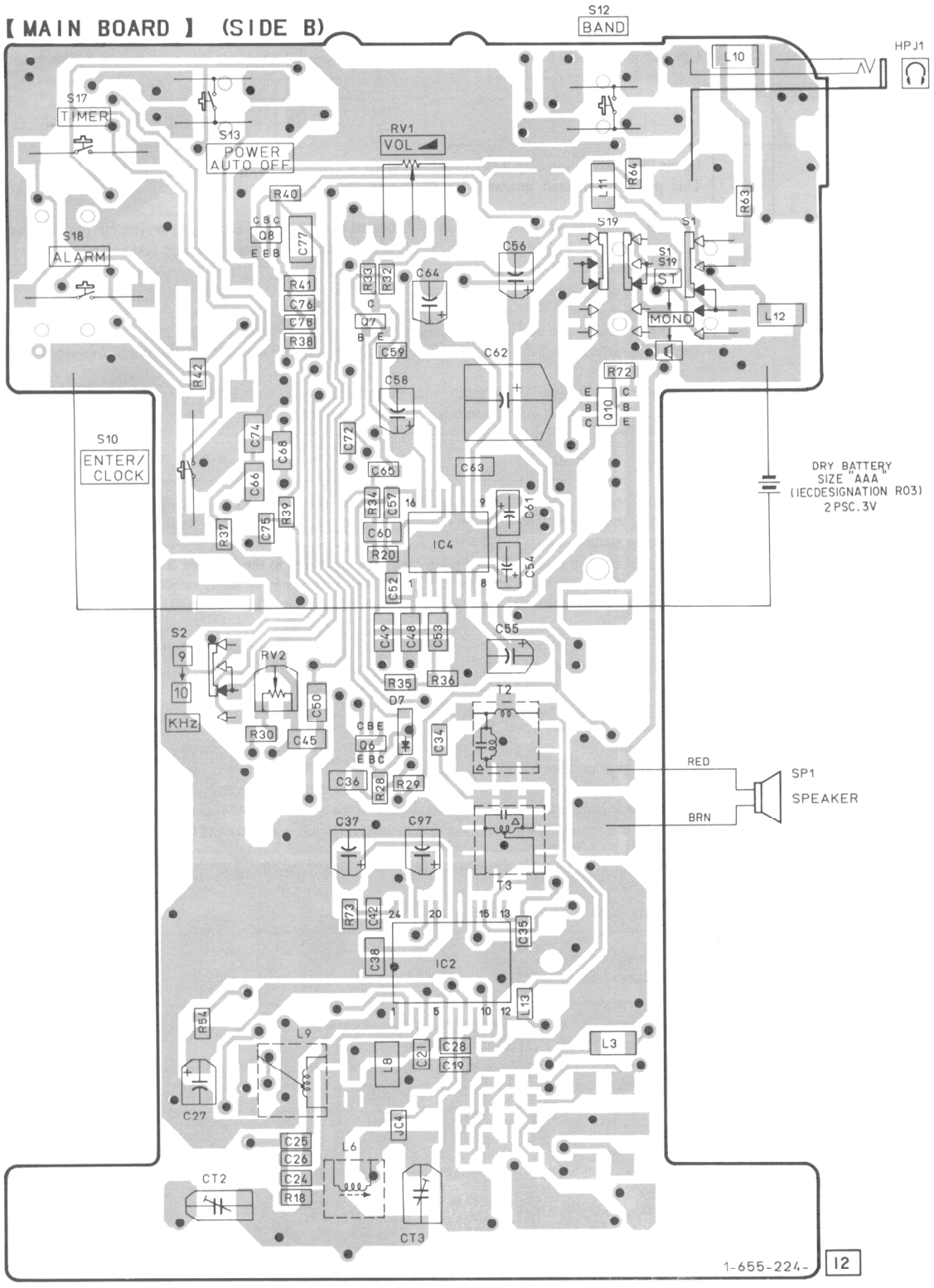
- ○——— : parts extracted from the component side.
- ● : Through hole.
- △ : internal component.
- ▨ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

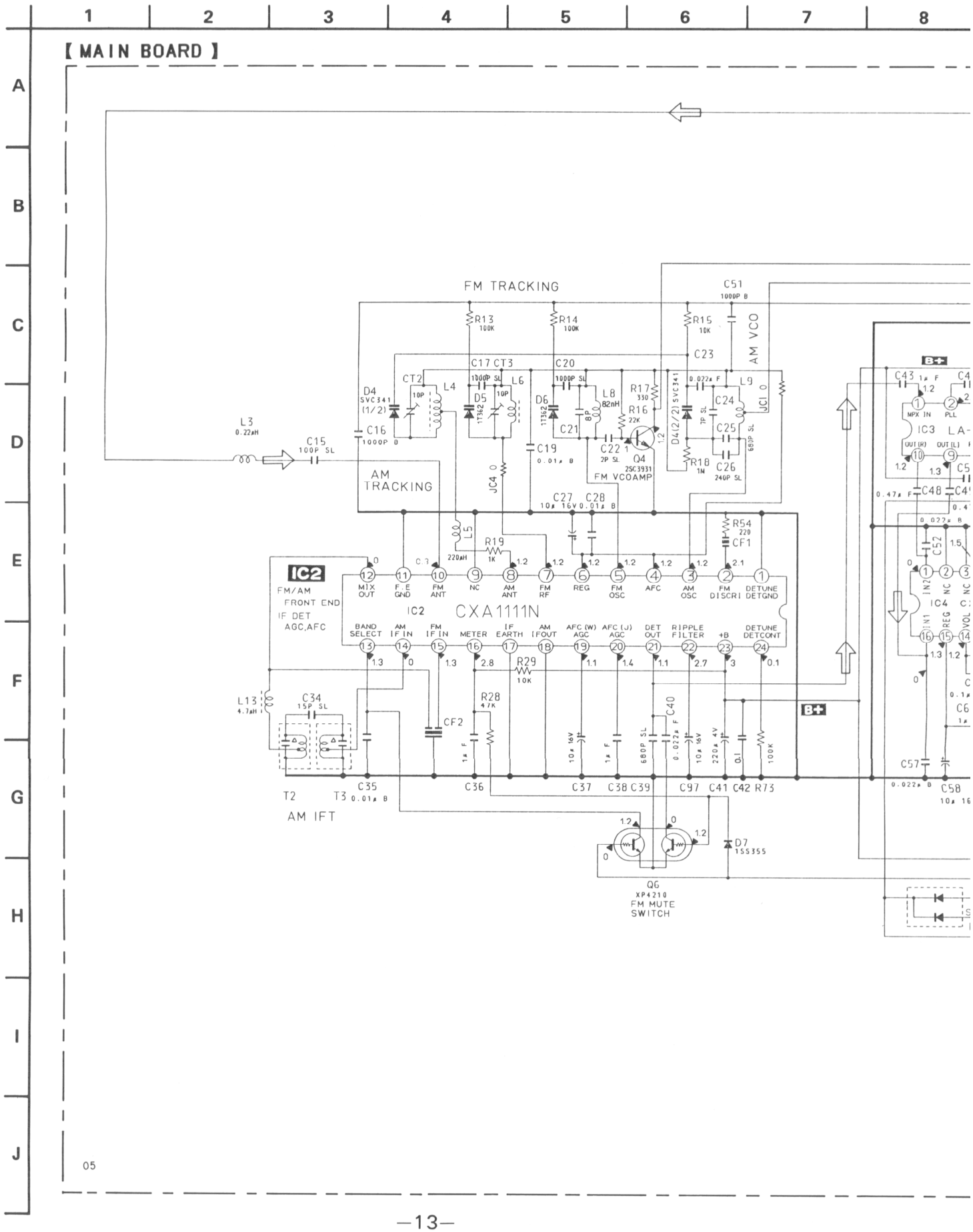
Caution:	
Pattern face side: (Side A)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side B)	Parts on the parts face side seen from the parts face are indicated.

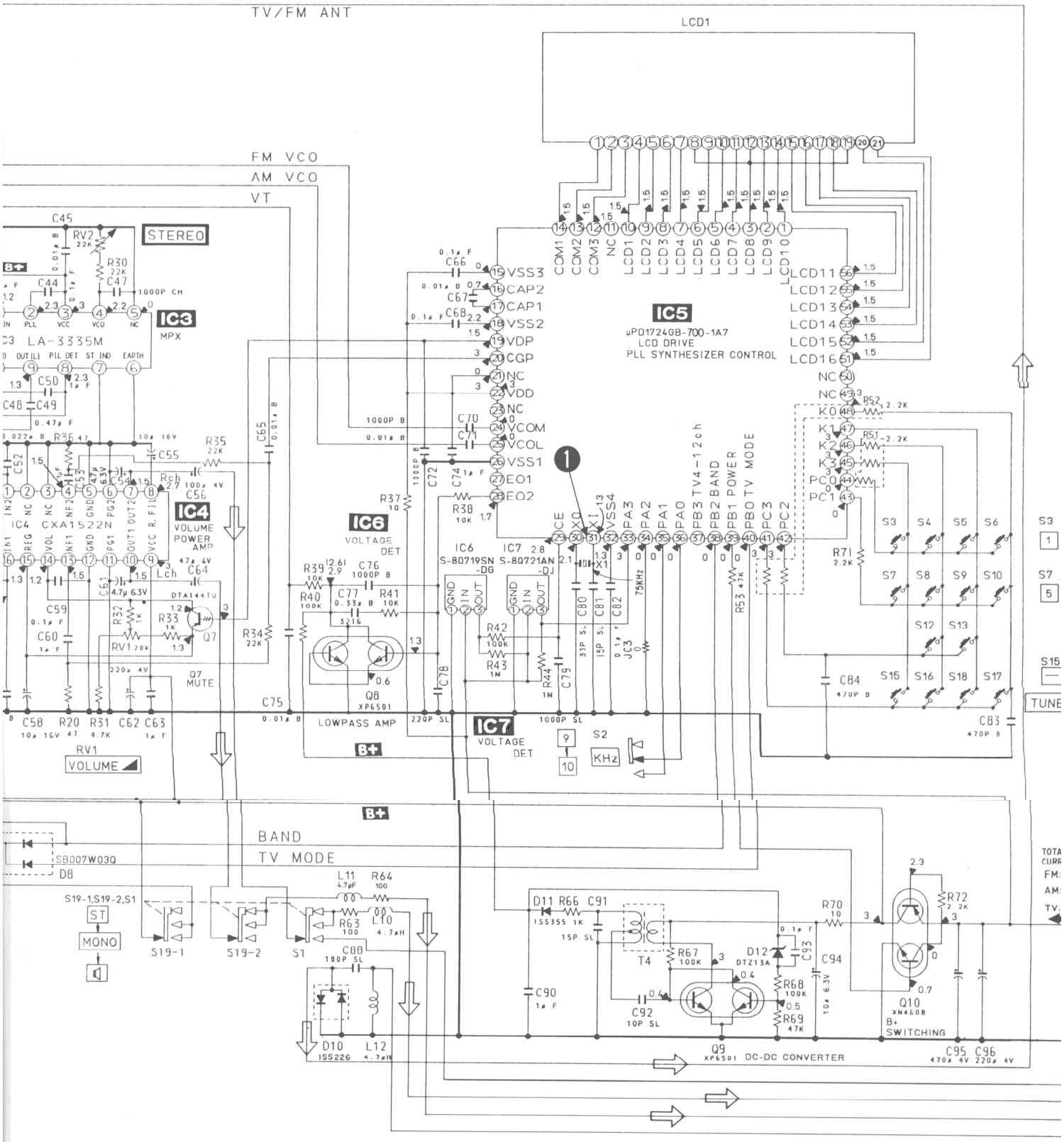
4-2. PRINTED WIRING BOARD

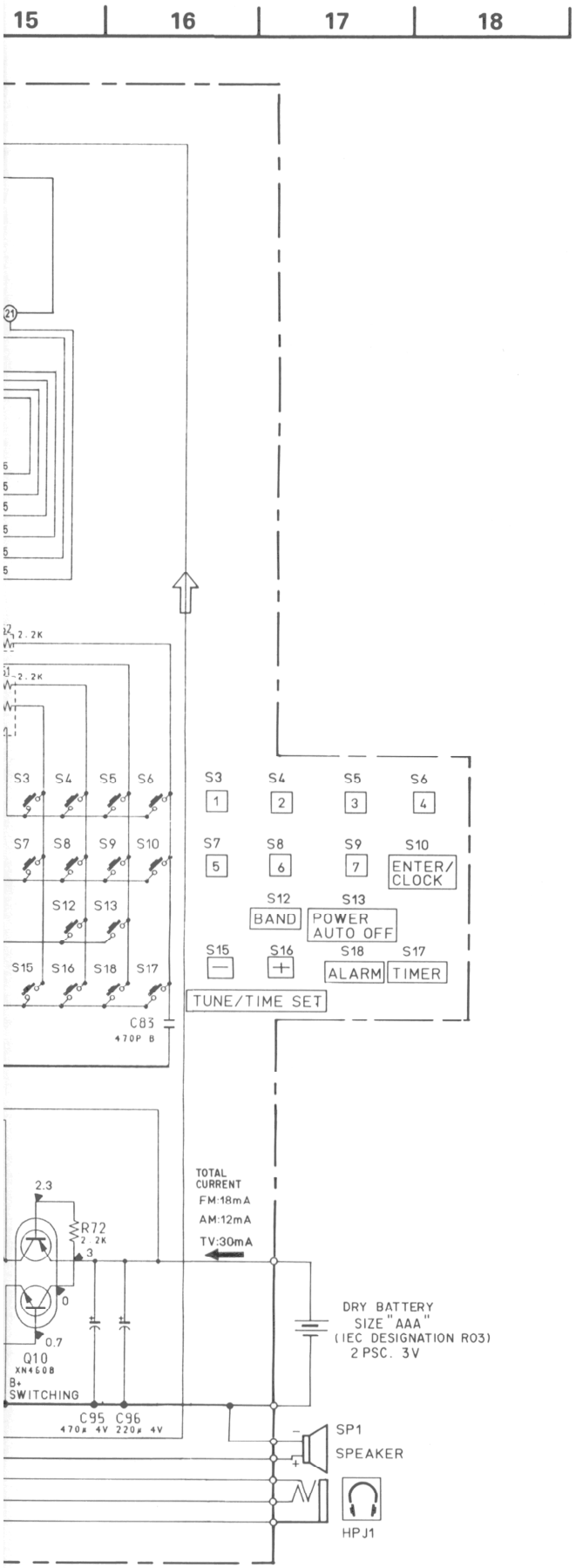
6	7	8	9	10	11


【MAIN BOARD】 (SIDE B)
S12
BAND
HPJ1
L10
S17
TIMER
S13
POWER
AUTO OFF
RV1
VOL
R40
L11
R64
R63
S18
ALARM
S19
S1
ST
MONO
L12
R41
C76
C78
R38
C64
C56
R33
R32
C59
C62
R72
C58
Q10
R42
S10
ENTER/
CLOCK
C74
C68
C72
C65
C63
C66
C75
R39
R37
C60
R20
IC4
C61
C54
C52
DRY BATTERY
SIZE "AAA"
(IECDESIGNATION R03)
2PSC.3V
S2
RV2
C49
C48
C53
C55
R35
R36
T2
D7
Q6
C50
R30
C45
C34
C36
R28
R29
RED
SP1
SPEAKER
BRN
C37
C97
T3
R73
C42
C35
C38
IC2
L13
R54
L9
L3
C27
L8
C21
C28
C19
JC4
C25
C26
C24
R18
L6
CT2
CT3
1-655-224-
12

4-3. SCHEMATIC DIAGRAM

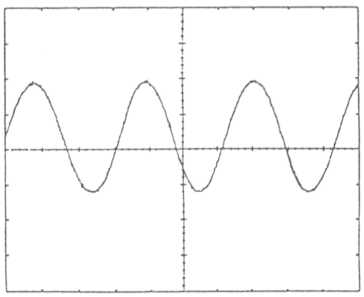



TV/FM ANT
LCD1
FM VCO
AM VCO
VT
STEREO
IC3
MPX
LA-3335M
IC4
VOLUME
POWER
AMP
CXA1522N
IC5
μPD1724GB-700-1A7
LCD DRIVE
PLL SYNTHESIZER CONTROL
IC6
VOLTAGE
DET
S-80719SN -DG
S-80721AN -DJ
IC7
VOLTAGE
DET
LOWPASS AMP
RV1
VOLUME
Q7
MUTE
Q8
XP6501
Q9
XP6501
DC-DC CONVERTER
Q10
XN4608
B+
SWITCHING
BAND
TV MODE
SB007W030
D8
S19-1,S19-2,S1
ST
MONO
S19-1
S19-2
S1
D10
1SS226
D11
1SS355
D12
DTZ13A
T4
S2
KHz
TUNE
S3
S7
S15
TV4-12ch
BAND
POWER
TV MODE
75KHz
-2.2K
-12ch
-DG
-DJ
-2.2K
-2.2K
-2.2K



• **Waveform**

❶ IC5 ㉛ 1.8 Vp-p 75 kHz



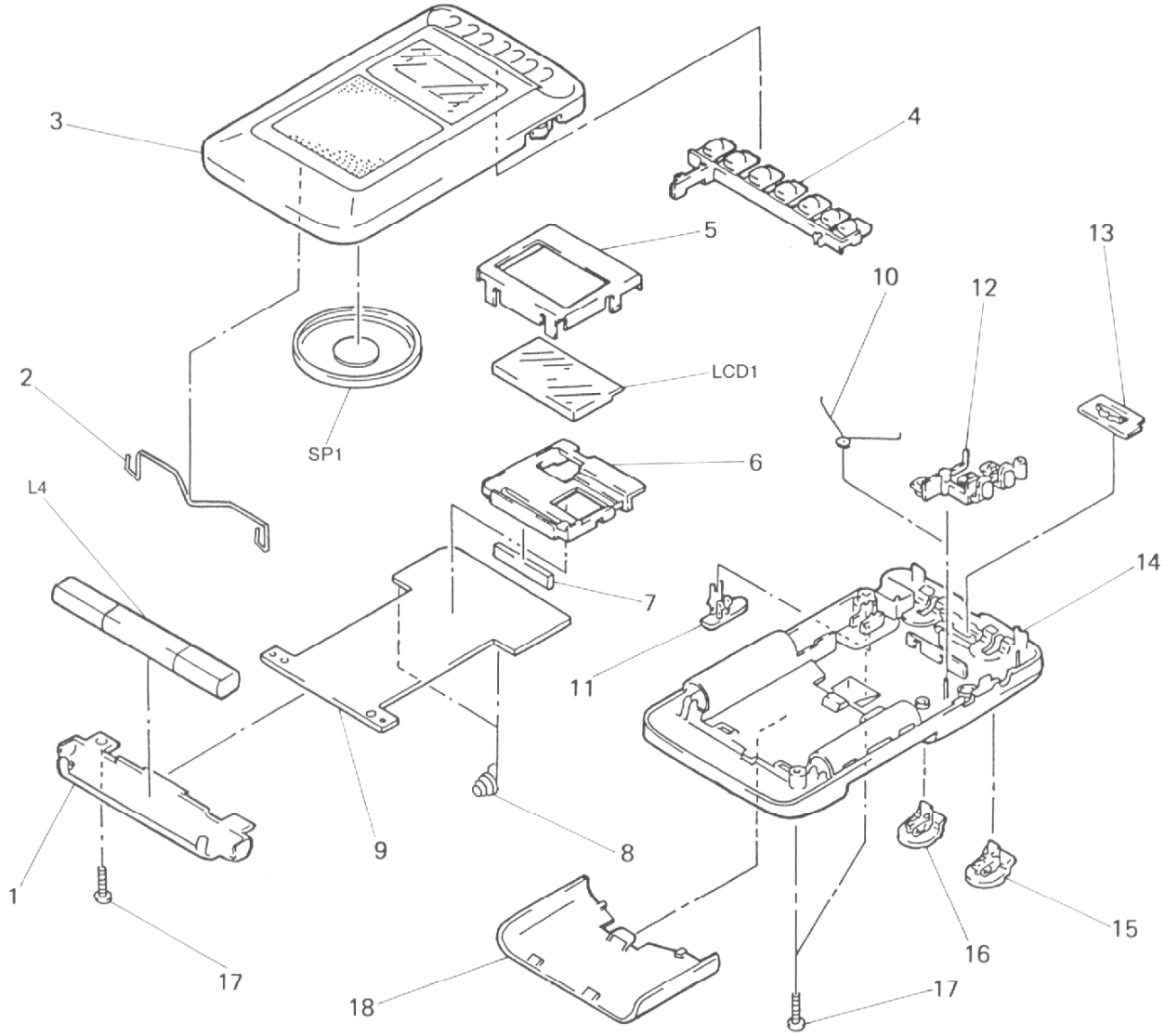
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.
- B+ : B + Line.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Power voltage is dc 3 V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM

SECTION 5
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.



Ref. No.	Part No.	Description	Remark
1	3-920-561-01	HOLDER (ANT)	
2	3-920-566-01	SPRING (+, -), BATTERY	
3	X-3370-592-1	CABINET (FRONT) ASSY	
4	3-920-555-01	BUTTON (PRE)	
* 5	3-383-130-01	SHIELD (LCD)	
6	3-383-131-01	HOLDER, LCD	
7	1-537-455-11	CONDUCTIVE BOARD, CONNECTION	
8	3-920-565-01	SPRING, BATTERY	
* 9	A-3662-284-A	MAIN BOARD, COMPLETE	
10	3-920-562-01	SPRING	
11	3-920-560-01	KNOB (EP/SP)	
12	3-920-558-01	BUTTON (ENTER)	
13	3-920-559-01	KNOB (LOCK)	
14	3-920-552-31	CABINET (REAR)	
15	3-920-556-02	BUTTON (POWER)	
16	3-920-553-02	BUTTON (BAND)	
17	3-363-895-01	SCREW (M1.7)	
18	3-383-126-11	LID, BATTERY CASE	
LCD1	1-810-912-11	DISPLAY PANEL, LIQUID CRYSTAL	
SP1	1-504-765-11	SPEAKER (3.6CM)	

SECTION 6
ELECTRICAL PARTS LIST

MAIN

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

Ref.No.	Part No.	Description			Remark
*	A-3662-284-A	MAIN BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C15	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C16	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C17	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C19	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C20	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C21	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C22	1-162-932-11	CERAMIC CHIP	2PF	0.25PF	50V
C23	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C24	1-162-938-11	CERAMIC CHIP	7PF	0.5PF	50V
C25	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C26	1-164-466-11	CERAMIC CHIP	240PF	5%	50V
C27	1-124-779-00	ELECT CHIP	10uF	20%	16V
C28	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C34	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C35	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C36	1-164-346-11	CERAMIC CHIP	1uF		16V
C37	1-124-779-00	ELECT CHIP	10uF	20%	16V
C38	1-164-346-11	CERAMIC CHIP	1uF		16V
C39	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C40	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C41	1-124-434-00	ELECT	220uF	20%	4V
C42	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C43	1-164-346-11	CERAMIC CHIP	1uF		16V
C44	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C45	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C47	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C48	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C49	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C50	1-164-346-11	CERAMIC CHIP	1uF		16V
C51	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C52	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C53	1-164-346-11	CERAMIC CHIP	1uF		16V
C54	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V
C55	1-124-779-00	ELECT CHIP	10uF	20%	16V
C56	1-126-209-11	ELECT	100uF	20%	4V
C57	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C58	1-124-779-00	ELECT CHIP	10uF	20%	16V
C59	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C60	1-164-346-11	CERAMIC CHIP	1uF		16V
C61	1-107-812-11	TANTAL. CHIP	4.7uF	20%	6.3V
C62	1-126-246-11	ELECT CHIP	220uF	20%	4V
C63	1-164-346-11	CERAMIC CHIP	1uF		16V
C64	1-126-607-11	ELECT CHIP	47uF	20%	4V
C65	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C66	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C67	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C68	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C70	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C71	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C72	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C74	1-164-346-11	CERAMIC CHIP	1uF		16V
C75	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C76	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C77	1-162-568-11	CERAMIC CHIP	0.33uF	10%	16V
C78	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C79	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C80	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
C81	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C82	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C83	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C84	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C88	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C90	1-164-346-11	CERAMIC CHIP	1uF		16V
C91	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C92	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V
C93	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C94	1-135-243-11	TANTAL. CHIP	10uF	20%	6.3V
C95	1-104-483-11	ELECT	470uF	20%	4V
C96	1-124-434-00	ELECT	220uF	20%	4V
C97	1-124-779-00	ELECT CHIP	10uF	20%	16V
		< FILTER >			
CF1	1-579-881-11	FILTER, CERAMIC			
CF2	1-579-881-11	FILTER, CERAMIC			

MAIN

Ref. No.	Part No.	Description	Remark
		< TRIMMER >	
CT2	1-141-327-11	CAP, VAR, TRIMMER (CHIP TYPE) 10P	
CT3	1-141-327-11	CAP, VAR, TRIMMER (CHIP TYPE) 10P	
		< DIODE >	
D4	8-719-945-31	DIODE SVC341-L	
D5	8-713-100-11	DIODE 1T362	
D6	8-713-100-11	DIODE 1T362	
D7	8-719-988-62	DIODE 1SS355	
D8	8-719-988-78	DIODE SB007W03Q	
D10	8-719-800-76	DIODE 1SS226	
D11	8-719-988-62	DIODE 1SS355	
D12	8-719-977-39	DIODE DTZ13A	
		< JACK >	
HPJ1	1-568-570-11	JACK (Ω)	
		< IC >	
IC2	8-752-065-30	IC CXA1111N	
IC3	8-759-804-98	IC LA3335M	
IC4	8-752-065-32	IC CXA1522N	
IC5	8-759-347-91	IC uPD1724GB-700-1A7	
IC6	8-759-249-34	IC S-80719SN-DG	
IC7	8-759-087-47	IC S-80721AN-DJ-S	
		< RESISTOR >	
JC1	1-216-864-11	METAL CHIP 0	
JC3	1-216-864-11	METAL CHIP 0	
JC4	1-216-864-11	METAL CHIP 0	
		< COIL >	
L3	1-412-931-11	INDUCTOR 0.22uH	
L4	1-501-748-11	ANTENNA, FERRITE-ROD (MW)	
L5	1-410-658-31	INDUCTOR CHIP 220uH	
L6	1-402-809-21	COIL (WITH CORE) (FM RF)	
L8	1-410-806-11	INDUCTOR 82nH	
L9	1-402-712-31	COIL (OSC)	
L10	1-412-947-11	INDUCTOR 4.7uH	
L11	1-412-947-11	INDUCTOR 4.7uH	
L12	1-412-947-11	INDUCTOR 4.7uH	
L13	1-412-987-31	INDUCTOR 4.7uH	
		< LIQUID CRYSTAL DISPLAY >	
LCD1	1-810-912-11	DISPLAY PANEL, LIQUID CRYSTAL	

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q4	8-729-423-52	TRANSISTOR 2SC3931-C	
Q6	8-729-427-61	TRANSISTOR XP4210-TXE	
Q7	8-729-921-58	TRANSISTOR DTA144TU	
Q8	8-729-427-83	TRANSISTOR XP6501	
Q9	8-729-427-83	TRANSISTOR XP6501	
Q10	8-729-402-16	TRANSISTOR XN4608	
		< RESISTOR >	
R13	1-216-845-11	METAL CHIP 100K 5%	1/16W
R14	1-216-845-11	METAL CHIP 100K 5%	1/16W
R15	1-216-833-11	METAL CHIP 10K 5%	1/16W
R16	1-216-841-11	METAL CHIP 47K 5%	1/16W
R17	1-216-815-11	METAL CHIP 330 5%	1/16W
R18	1-216-857-11	METAL CHIP 1M 5%	1/16W
R19	1-216-821-11	METAL CHIP 1K 5%	1/16W
R20	1-216-805-11	METAL CHIP 47 5%	1/16W
R28	1-216-841-11	METAL CHIP 47K 5%	1/16W
R29	1-216-833-11	METAL CHIP 10K 5%	1/16W
R30	1-216-837-11	METAL CHIP 22K 5%	1/16W
R31	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R32	1-216-821-11	METAL CHIP 1K 5%	1/16W
R33	1-216-821-11	METAL CHIP 1K 5%	1/16W
R34	1-216-837-11	METAL CHIP 22K 5%	1/16W
R35	1-216-837-11	METAL CHIP 22K 5%	1/16W
R36	1-216-805-11	METAL CHIP 47 5%	1/16W
R37	1-216-797-11	METAL CHIP 10 5%	1/16W
R38	1-216-833-11	METAL CHIP 10K 5%	1/16W
R39	1-216-833-11	METAL CHIP 10K 5%	1/16W
R40	1-216-845-11	METAL CHIP 100K 5%	1/16W
R41	1-216-833-11	METAL CHIP 10K 5%	1/16W
R42	1-216-845-11	METAL CHIP 100K 5%	1/16W
R43	1-216-857-11	METAL CHIP 1M 5%	1/16W
R44	1-216-857-11	METAL CHIP 1M 5%	1/16W
R51	1-236-631-11	RES, NETWORK 2.2K	
R52	1-236-631-11	RES, NETWORK 2.2K	
R53	1-216-841-11	METAL CHIP 47K 5%	1/16W
R54	1-216-813-11	METAL CHIP 220 5%	1/16W
R63	1-216-809-11	METAL CHIP 100 5%	1/16W
R64	1-216-809-11	METAL CHIP 100 5%	1/16W
R66	1-216-821-11	METAL CHIP 1K 5%	1/16W
R67	1-216-845-11	METAL CHIP 100K 5%	1/16W
R68	1-216-845-11	METAL CHIP 100K 5%	1/16W
R69	1-216-841-11	METAL CHIP 47K 5%	1/16W
R70	1-216-797-11	METAL CHIP 10 5%	1/16W
R71	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R72	1-216-825-11	METAL CHIP 2.2K 5%	1/16W

Ref. No.	Part No.	Description	Remark
R73	1-216-845-11	METAL CHIP 100K 5% 1/16W	
		< VARIABLE RESISTOR >	
RV1	1-237-870-11	RES, VAR, CARBON 20K (VOLUME)	
RV2	1-223-587-11	RES, ADJ, CARBON 22K (STEREO)	
		< SWITCH >	
S1	1-571-506-11	SWITCH, SLIDE (ST/MONO/SPEAKER)	
S2	1-571-275-11	SWITCH, SLIDE (9k/10kHz)	
S3	1-572-921-11	SWITCH, KEY BOARD (1)	
S4	1-572-921-11	SWITCH, KEY BOARD (2)	
S5	1-572-921-11	SWITCH, KEY BOARD (3)	
S6	1-572-921-11	SWITCH, KEY BOARD (4)	
S7	1-572-921-11	SWITCH, KEY BOARD (5)	
S8	1-572-921-11	SWITCH, KEY BOARD (6)	
S9	1-572-921-11	SWITCH, KEY BOARD (7)	
S10	1-572-473-11	SWITCH, TACTILE (ENTER/CLOCK)	
S12	1-692-088-11	SWITCH, TACTILE (BAND)	
S13	1-692-088-11	SWITCH, TACTILE (POWER AUTO OFF)	
S15	1-692-088-11	SWITCH, TACTILE (TUNE/TIME SET -)	
S16	1-692-088-11	SWITCH, TACTILE (TUNE/TIME SET +)	
S17	1-572-473-11	SWITCH, TACTILE (TIMER)	
S18	1-572-473-11	SWITCH, TACTILE (ALARM)	
S19	1-571-733-21	SWITCH, SLIDE (ST/MONO/SPEAKER)	
		< TRANSFORMER >	
T2	1-406-608-11	TRANSFORMER, IF	
T3	1-406-609-11	TRANSFORMER, IF	
T4	1-449-021-21	COIL, DC/DC/ CONVERTER	
		< VIBRATOR >	
X1	1-567-769-11	VIBRATOR, CRYSTAL (75kHz)	
**********			
		MISCELLANEOUS	
		**********	
7	1-537-455-11	CONDUCTIVE BOARD, CONNECTION	
LCD1	1-810-912-11	DISPLAY PANEL, LIQUID CRYSTAL	
SP1	1-504-765-11	SPEAKER (3.6CM)	
**********			

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-800-379-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, SPANISH)	
	3-800-379-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, SPANISH, AEP)	
	3-925-863-01	CARRYING CASE	
*	3-925-864-01	INDIVIDUAL CARTON	
	8-953-099-90	HEADPHONE MDR-E505MM SET	
	X-3329-657-1	ATTACHMENT	